ABSTRACT OF THE DISCLOSURE

Induction voltage command Em* is obtained from inverter's primary frequency command ω1* and torque boost voltage commander produces torque boost voltage command ΔVz* in accordance with ω1* while integrator produces reference phase command θd*. uvw/dq converter detects motor excitation current Id (equivalent of no-load current). Next, deviation of excitation current limitation level command Idmax* and detected Id is inputted to limiter processing unit to produce torque boost voltage compensation value ΔVc for varying ΔVz* so that Id is smaller than or equal to Idmax*. Inverted ΔVz* is set up as a lower limiter value of the limiter processing unit. Next, ΔVc and Δ Vz* are added to produce final compensated torque boost voltage command ΔVt* and ΔVt* and Em* are added to produce q-axis voltage command Vq* of the inverter output voltage.